

CUSTOMER NO.: 24498
Serial No.: 10/556,832
Final Office Action dated: 07/21/09
Response dated: 11/20/09

PATENT
PD030051

Listing and Amendment of the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-11. (CANCELLED)

12. (NEW) A method for generating a track type signal using a scanning unit for an optical recording medium having data stored in tracks, wherein the scanning unit includes an objective lens and a focus control loop, and is operative to produce an optical main beam and at least one secondary beam and to evaluate light reflected from the optical recording medium with a plurality of photodetector segments associated with the main beam and the at least one secondary beam, the method comprising steps of:

scanning the optical recording medium with a scanning beam, the focus control loop being activated;

deflecting the objective lens in a focus direction by feeding a disturbance signal into the focus control loop;

deriving a first error signal only from signals of the photodetector segments associated with the main beam;

deriving a second error signal different from the first error signal only from signals of the photodetector segments associated with the at least one secondary beam;

deriving first and second branch weights from the disturbance signal multiplied with a difference between the first error signal and the second error signal; and

forming the track type signal by combining the first error signal multiplied by the first branch weight with the second error signal multiplied by the second branch weight.

13. (NEW) The method as claimed in claim 12, wherein the step of deriving the first and second branch weights comprises one of averaging and integrating the disturbance signal multiplied with a difference between the first error signal and the second error signal.

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14. (NEW) The method as claimed in claim 12, wherein those signals involved in the method that are based on a plurality of individual signals are normalized relative to a sum of the individual signals.

15. (NEW) A method for generating a track type signal using a scanning unit for an optical recording medium having data stored in tracks, wherein the scanning unit includes an objective lens and a focus control loop, and is operative to produce an optical main beam and at least one secondary beam and to evaluate light reflected from the optical recording medium with a plurality of photodetector segments associated with the main beam and the at least one secondary beam, the method comprising steps of:

deriving a first error signal only from signals of the photodetector segments associated with the main beam;

deriving a second error signal different from the first error signal only from signals of the photodetector segments associated with the at least one secondary beam;

scanning the optical recording medium with a scanning beam;

deflecting the objective lens in a focus direction by moving the objective lens towards the optical recording medium with the focus control loop open;

calculating first and second branch weights from the amplitudes of the first and second error signals such that a difference between the first and second error signals multiplied by the first and second branch weights disappears; and

forming the track type signal by combining the first error signal multiplied by the first branch weight with the second error signal multiplied by the second branch weight.

16. (NEW) The method as claimed in claim 15, wherein those signals involved in the method that are based on a plurality of individual signals are normalized relative to a sum of the individual signals.

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17. (NEW) A method for generating a track type signal using a scanning unit for an optical recording medium having data stored in tracks, wherein the scanning unit includes an objective lens and a focus control loop, and is operative to produce an optical main beam and at least one secondary beam and to evaluate light reflected from the optical recording medium with a plurality of photodetector segments associated with the main beam and the at least one secondary beam, the method comprising steps of:

deriving a first error signal only from signals of the photodetector segments associated with the main beam;

deriving a second error signal different from the first error signal only from signals of the photodetector segments associated with the at least one secondary beam;

scanning the optical recording medium with a scanning beam;

deflecting the objective lens in a focus direction by moving the objective lens towards the optical recording medium with the focus control loop open;

deriving a first and a second branch weight by changing the first and second branch weight in at least one adjustment step if there is any difference between the amplitude of the first error signal multiplied by the first branch weight and the amplitude of the second error signal multiplied by the second branch weights such that the difference between the amplitudes is reduced; and

forming the track type signal by combining the first error signal multiplied by the first branch weight with the second error signal multiplied by the second branch weight.

18. (NEW) The method as claimed in claim 17, wherein a magnitude of the change to the first and second branch weights in an adjustment step is determined as a function of a value of the evaluation signal in a previous adjustment step.

19. (NEW) The method as claimed in claim 17, wherein those signals involved in the method that are based on a plurality of individual signals are normalized relative to a sum of the individual signals.